

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) An electrophoretic display with a pixel comprising:

a reservoir volume and an image volume,

particles having different colors and different electrophoretic mobilities, wherein the particles determine a visible color of the pixel when present in the image volume, and wherein the particles do not contribute to the visible color of the pixel when present in the reservoir volume,

select electrodes for generating in the reservoir volume a select electric field for separating the particles in different sub-volumes in the reservoir volume, and

at least one fill electrode for generating a fill electric field (FF) to move the particles from the sub-volumes into the image volume, wherein an outer perimeter of the pixel is non-uniform.

2. (Previously Presented) The electrophoretic display as claimed in claim 1, wherein the at least one fill electrode is positioned to obtain the fill electric field directed for simultaneously moving the particles from the sub-volumes into the image volume.

3. (Previously Presented) The electrophoretic display as claimed in claim 1, wherein the fill electrodes comprise sub fill electrodes associated with the different sub-volumes for generating the fill electric field to comprise sub fill electric fields in the different sub-volumes.

4. (Previously Presented) The electrophoretic display as claimed in claim 3, wherein the select electric field extends in a first direction and the sub fill electric fields in a second direction different from the first direction.

5. (Previously Presented) The electrophoretic display as claimed in claim 4, wherein the reservoir volume comprises

shielding electrodes for substantially shielding in the first direction the sub fill electric fields of the different sub-volumes from each other.

6.(Previously Presented) The electrophoretic display as claimed in claim 4, wherein the pixel comprises a further fill electrode arranged in the image volume in the second direction further away from the reservoir volume than the sub fill electrodes for attracting the particles leaving the sub-volumes further into the image volume.

7.(Previously Presented) The electrophoretic display as claimed in claim 6, wherein the further fill electrode is positioned in the second direction at a border of the image volume at a maximal distance from the reservoir volume.

8.(Previously Presented) An electrophoretic display comprising a pixel comprising,  
a reservoir volume and an image volume,

particles having different colors and different electrophoretic mobilities, wherein the particles determine a visible color of the pixel when present in the image volume, and wherein the particles do not contribute to the visible color of the pixel when present in the reservoir volume,

select electrodes for generating in the reservoir volume a select electric field for separating the particles in different sub-volumes in the reservoir volume, and

at least one fill electrode for generating a fill electric field to move the particles from the sub-volumes into the image volume,

wherein the fill electrodes comprise sub fill electrodes associated with the different sub-volumes for generating the fill electric field to comprise sub fill electric fields in the different sub-volumes,

wherein the select electric field extends in a first direction and the sub fill electric fields in a second direction different from the first direction,

wherein the pixel comprises a further fill electrode, and

wherein the further fill electrode is positioned in the second direction within the image volume but at less than the maximal distance from the reservoir volume.

9. (Previously Presented) The electrophoretic display as claimed in claim 6, wherein the further fill electrode is positioned with respect to the sub-volumes to obtain a fill electric field which is higher for the particles having a slower electrophoretic mobility than for the particles having a higher electrophoretic mobility.

10. (Previously Presented) The electrophoretic display as claimed in claim 1, further comprising:

a further reservoir volume,

further select electrodes for generating in the further reservoir volume a further select electric field for separating the particles in further different sub-volumes in the further reservoir volume, and

further fill electrodes for generating a further fill electric field to simultaneously or time sequentially move the different

types of particles from the further sub-volumes into the image volume.

11. (Previously Presented) The electrophoretic display as claimed in claim 10, wherein the electrophoretic display comprises a controller for controlling the select electrodes, the at least one fill electrode, the further select electrodes, and the further fill electrodes to obtain a separation of the particles in the reservoir volume simultaneously to filling or resetting particles to or from the further reservoir volume, or the other way around.

12. (Previously Presented) The electrophoretic display as claimed in claim 1, wherein the image volume is box shaped, the select electrodes being arranged for generating the select electric field in a first direction substantially parallel with a border plane of the image volume, and the fill electrodes being arranged for generating the fill electric field in a second direction substantially perpendicular to the first direction.

13. (Previously Presented) The electrophoretic display as claimed in claim 1, further comprising reset means for removing the particles from the image volume to store the particles in a store volume in the reservoir volume.

14. (Previously Presented) The electrophoretic display as claimed in claim 13, wherein the reset means comprise one of the select electrodes for attracting the particles in the image volume towards the store volume adjacent to the one of the select electrodes.

15. (Previously Presented) The electrophoretic display as claimed in claim 1, wherein the mobility of the particles has a predetermined ratio, and wherein a movement path of the particles in the reservoir volume has a length to enable the particles to be separated in the sub-volumes which are substantially non-overlapping.

16. (Previously Presented) The electrophoretic display as claimed in claim 15, wherein the particles comprise a first, second

and third type of particles all being charged in the same polarity, and having different mobilities.

17. (Previously Presented) The electrophoretic display as claimed in claim 15, wherein the particles comprise a first and a second type of particles both being charged in the same polarity and having different mobilities and a third type of particles being charged oppositely.

18. (Previously Presented) The electrophoretic display as claimed in claim 1, wherein the pixel comprises a reset electrode to attract the particles during a reset phase wherein the particles have to be moved into a store volume in the reservoir volume.

19. (Previously Presented) The electrophoretic display as claimed in claim 18, wherein the reset electrode is associated with the center of the image volume, and wherein the electrophoretic display further comprises a processor for successively supplying a voltage to the reset electrode to attract the particles towards the center of the image volume and a voltage to one of the select



electrodes being associated with the store volume to attract the particles to move into the store volume.

20. (Currently Amended) A method of driving an electrophoretic display with a pixel, the electrophoretic display comprising:

a reservoir volume and ~~a~~an image volume,  
particles having different colors and different electrophoretic mobilities, wherein the particles determine a visible color of the pixel when present in the image volume, and wherein the particles do not contribute to the visible color of the pixel when present in the reservoir volume, the method comprising:

generating in the reservoir volume a select electric field for separating the particles in different sub-volumes in the reservoir volume, and

generating a fill electric field to move the particles from the sub-volumes into the image volume, wherein an outer perimeter of the pixel is non-uniform.

21. (Previously Presented) A display apparatus comprising an electrophoretic display as claimed in claim 1, wherein a portion of the perimeter bulges outward.